Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of:	)	
	)	
Amendment of Part 90 of the Commission's Rules	)	WP Docket No. 07-100
	)	

COMMENTS OF THE STATE OF MARYLAND

July 6, 2018

Summary

The State of Maryland, by and through its Department of Information Technology, submits these Comments in response to the Federal Communications Commission's ("FCC" or "Commission") Sixth Further Notice of Proposed Rule Making ("NPRM") in Docket WP 07-100.[1] This important NPRM provides an opportunity for public safety organizations to clarify the scope to which the 4.9 GHz band is used in the support of first responders and public safety communications.

Maryland believes that the FCC has identified and proposed many good modifications to its rules governing the 4.9 GHz band. Of significant importance to Maryland's first responders, we believe that the 4.9 GHz band should continue to support public safety communications as a ***primary*** spectrum resource. Notwithstanding our support for primary public safety use, it is likely that ***secondary*** use[2] of the spectrum may be possible in some areas of the country through improved frequency coordination.

[1] *Amendment of Part 90 of the Commission's Rules*, WP Docket No. 07-100, Sixth Notice of Proposed Rulemaking, FCC 18-33 (rel. Mar. 23, 2018).
[2] ***See*** 47 CFR §90.7 for secondary operation; Radio communications which may not cause interference to operations authorized on a primary basis and which are not protected from interference from those primary operations.

Among the many questions posed in the NPRM is the critical matter of coordination as well as the role of Regional Planning Committees ("RPCs"). Coordination of spectrum use is a critical issue and Maryland looks forward to enhanced coordination through a "national plan" or a "regional plan" crafted by Regional Planning Committee Twenty ("Region 20").

Maryland also notes, with some concern, the potential reallocation of the band in part or in whole based upon the number of public safety licenses that have been issued to date. We agree with the Commission that the original rules governing the use of the 4.9 GHz spectrum may not reflect the actual amount of public safety use. To that end, these Comments include all 4.9 GHz licenses issued throughout Region 20 as a starting place for quantifying use of the spectrum. We believe that through some of the modifications proposed in the NPRM, use of this spectrum will become more clearly identified. The State recommends that the 4.9 GHz spectrum remain with public safety until the record in Docket WP 07-100 is expanded to reflect changes and increases in use as the result of this NPRM.

Scope of 4.9 GHz Use in Maryland and surrounding jurisdictions

One of the key issues in the NPRM relates to the amount of use in the 4.9 GHz band. As the NPRM noted in ¶1[3], the actual number of licensees does not necessarily correlate with the scope of use. In these Comments, Maryland quantifies the number of 4.9 GHz licenses issued in Region 20; however, very few of these licenses reveal an actual number of point-to-point ("PTP) or point-to-multi-point (PMP) paths or other uses. Within the public safety communications user

[3] The Commission has allocated and designated 50 megahertz of spectrum in the 4.9 GHz band (4940-4990 MHz) to public safety. Although nearly 90,000 public safety entities are eligible under our rules to obtain licenses in the band, there were only 2,442 licenses in use in 2012 and only 3,174 licenses in use nearly six years later in 2018. With no more than 3.5% of potential licensees using the band, we remain concerned that, as the Commission stated in 2012, the band has "fallen short of its potential."

base, there may be many technical deployments occurring under a single "statewide" or "countywide" license which does not provide an accurate picture of use.

Multiple Maryland state agencies have been licensed[4] to use 4.9 GHz spectrum in the delivery of public safety services under several statewide FCC licenses. These licenses have been issued to the Department of Natural Resources ("DNR"), Maryland Institute for Emergency Medical Services Systems ("MIEMSS"), the Maryland State Police ("MSP"), State Highway Administration ("SHA"), and the Department of Information Technology ("DoIT"). Additionally, local governments in Maryland possess an additional twenty-seven ("27") licenses[5] to operate in the 4.9 GHz frequency band. In the non-Maryland National Capital Region ("NCR") jurisdictions, thirteen ("13") licenses have also been used in both the District of Columbia[6] and the Northern Virginia[7] political sub-divisions in Region 20.

Coordination of 4.9 GHz spectrum use

One of the most important issues discussed in the NPRM relates to the issue of coordination of use. The NPRM discusses the issue of 4.9 GHz coordination extensively and Maryland agrees with the Commission's concept of modifying the Universal Licensing System ("ULS") to record PTP and PMP use. Except in those RPCs that have adopted a Plan for the use of 4.9 GHz,

[4] **WQAN291**, **WPYX998**, **WQQH737**, **WPYZ305**, **WPYT728**, and **WQAL856 (**State of Maryland**).**

[5] **WQGH506** (Allegany County), **WQDB729** (City of Annapolis), **WQHJ395** (Anne Arundel County), **WQHN425** and **WQDY442** (City of Baltimore), **WPYW659** (Baltimore County), **WQJD365** and **WQOS412** (Carroll County), **WQNY579** (City of Gaithersburg), **WQGQ618** (City of Salisbury), **WQCC953** (Caroline County), **WQDG450** (Dorchester County), **WQCR221** (Harford County), **WQHA774** (Howard County), **WQLX645** and **WQLX878** (City of Hyattsville), **WQDS926** (Kent County), **WQCQ769** (Montgomery County), **WQCG547** (Town of Ocean City), **WPYW624, WQNQ888**, and **WQKH786** (Prince George's County), **WQDV224** (Queen Anne's County), **WQGY244** (St. Mary's County), **WQCL957** (Washington County), **WQDB909** (Wicomico County), and **WQTR825** (Worcester County).

[6] **WRAV473** (District of Columbia), **WPZQ271**, **WQGZ463 and WQGZ464** (Metropolitan Washington Airport Authority)

[7] **WQCI770** (Arlington County), **WQHV238** and **WQIN420** (Fairfax County), **WQHV238** (Fairfax Water Authority) **WQGP221** (Fauquier County), and WQEE**799** (Loudoun County). In state government, **WQOF342** (Virginia State Police), **WQKF201** and **WQCW669** (Virginia Department of Transportation)

coordination has been both informal and infrequent. Using Prince George's County, outside of the District of Columbia as an example, potential licensed users of the spectrum could include the State's DNR, MSP, Maryland Transit Authority ("MTA") and SHA along with the Washington Metropolitan Area Transit Authority ("WMATA" if it had a license), the Washington Suburban Sanitary Commission ("WSSC" if it had a license), the County government, and some local municipal government communities within the County.

Maryland supports the Commission's initial strategy to require more detailed licensing that identifies specific fixed 4.9 GHz paths as this will minimize the potential of unwanted interference. The NPRM asks; "*should an authorized coordinator*" be responsible to manage the 4.9 GHz spectrum in a manner like 700 and 800 MHz National Public Safety Planning Advisory Committee ("NPSPAC") frequencies are controlled to prevent, or minimize, interference. The State believes that the problem of path protection is very similar to how microwave Part 101 users coordinate use through the publication of Prior Coordination Notices or "PCNs". Both approaches achieve the end result of frequency coordination and the minimization of interference for licensed paths. Simply stated, Maryland believes that coordination can occur either through traditional land mobile radio coordination or the development of a PCN process.

Notwithstanding the State's desire to see improved coordination, Maryland recognizes the continued need for 4.9 GHz services at temporary or itinerant locations where paths will be activated for intermittent periods necessary to complete a departmental mission. As an example, DNR applications may use 4.9 GHz links as part of a temporary wide-area surveillance to relay video to monitoring centers during law enforcement operations. So, while we encourage coordination for more permanent services, there will always be a need to support ad hoc temporary

installations which are permitted today under the general use provisions of the rules governing operation in the 4.9 GHz band.

With respect to the issue of coordination of use, Maryland supports the Commission's proposals to modify the ULS data basis to record paths and their associated frequencies or amount of spectrum consumed. This will permit Maryland's State, local governments, and special authorities to provide accurate information when licenses are renewed or optionally, before license renewal to record and coordinate activity.

Regional Planning

Maryland agrees that there are distinct benefits when a RPC coordinates spectrum. Region 20 has provided 700 and 800 MHz NPSPAC spectrum for governments of all kinds with some of the most unique requirements in the country; e.g., the sixteen channels and wide coverage area provided for the Washington Metropolitan Area Transit Authority ("WMATA"). Obviously, Maryland cannot speak for Region 20; however, the State does provide significant support for the Region and is very aware of the time consumed to develop a Regional Plan as well as managing frequency use. As such, we acknowledge that the time and effort required to craft and coordinate a Region 20 Plan for 4.9 GHz could be burdensome.

Alternatively, there are public safety communications organizations such as the National Public Safety Telecommunications Council ("NPSTC"), National Regional Planning Council ("NRPC"), and Association of Public-Safety Communications Officials-International ("APCO") that could work jointly with the Commission and develop a national plan for the use of the 4.9 GHz spectrum. Within a national plan, there could be "carve outs" or portions where the RPCs

could address specific issues such as channel aggregation. For a busy RPC like Region 20, a national plan with local carve outs of delegated responsibility could be quite helpful.

Developing a national plan removes a potential burden from the members of an RPC who would be required to develop a technically complex Plan for 4.9 GHz and then coordinate the Plan's information with adjoining RPCs. The State recognizes that RPC officers have full-time jobs already and the creation, management, and coordination of a third major Plan could be unduly burdensome. In an optimal manner, the FCC might adopt a national Plan created by the major communications organizations; e.g., APCO, NPSTC, and NRPC, with limited carve-out opportunities to address any unique issues within an RPC. Notwithstanding the development of a comprehensive national Plan, RPCs should also be afforded the ability to "opt-out" and create a Plan for 4.9 GHz in the future. Either a National Plan, National Plan with carve-outs, or an RPC Plan could achieve the goal of coordinating use of the spectrum for public safety and possibly others, such as Critical Infrastructure Industries ("CII")[8] which is the ultimate goal of the Commission.

Maryland will look forward to working with Region 20 in the near future as the issue of 4.9 GHz has been placed on the Agenda for the next annual meeting in August.

[8] 47 CFR §90.7 - *Critical Infrastructure Industry (CII).* State, local government and non-government entities, including utilities, railroads, metropolitan transit systems, pipelines, private ambulances, volunteer fire departments, and not-for-profit organizations that offer emergency road services, providing private internal radio services provided these private internal radio services are used to protect safety of life, health, or property; and are not made commercially available to the public.

Revised Band Plan

Maryland supports the proposed 4.9 GHz Band Plan as identified by the Commission in the NPRM. We particularly endorse the modification from WP 07-100 that allows 4.9 GHz to be used as a primary technology in support of land mobile radio backhaul. With the growing trend to strengthen backhaul modalities through the use of Multiple Protocol Labeling Systems ("MPLS") and other advanced communications systems, the use of 4.9 GHz provides another option for public safety systems to strengthen important backhaul communications systems. This proposed modification may also spur newer and more innovative products that strengthen public safety communications backhaul technology.

Maryland supports a fleet of fixed and rotor wing aircraft primarily used for law enforcement and medical emergency transportation. Reserving channels 1 – 5 for aeronautical and robotic use represents an important advance in support for aircraft operations. With respect to robotic use, Maryland recognizes that various frequency bands are used for this purpose based often on a manufacturer's engineering. Through the identification of channels 1 – 5 for robotic use, spectrum standards for robotic support could be established. To encourage the adoption of a standard band for robotic use, Maryland would suggest that the Commission consider a timeline for the requirement of manufacturers to migrate to channels 1 – 5; e.g., like the re-farming deadline for the migration from wide to narrowband operation. As a part of defining a deadline for spectrum to support robotic operations, Maryland would also suggest coordination with the related technical committees of the National Sherriff's Association ("NSA") and the International Association of Chiefs of Police ("IACP").

Use of 4.9 GHz Public Safety Spectrum

The primary use of this spectrum in Maryland has been generally two-fold: (1) transmission of video links or (2) backhaul support for connection to land mobile radio systems. Supporting video is an extremely important function for law enforcement and traffic safety. Maryland's SHA uses the spectrum to relay video economically to points where connection can be made to fiber. This is very helpful for the monitoring of interstate and primary access highways. The State's DNR also can use video in environmentally sensitive areas with minimal disruption while supporting law enforcement. MIEMSS uses the technology to support the State's emergency medical system ("EMS") by employing 4.9 GHz links to support video and broadband applications that connect hospitals to the central EMS communications facility in Baltimore.

In reviewing the use of the technology with others in Region 20, the 4.9 GHz applications as used by the State of Maryland are generally replicated by other public safety partners with video being the primary use of the spectrum. Looking forward, 4.9 GHz seems to be an extremely important tool that serves as an important link in relaying video in remote locations to fiber access points leading to central locations for monitoring communications.

Shared Use of Spectrum

The potential sharing of the 4.9 GHz spectrum is a difficult issue that is included within the NPRM. We recognize and appreciate the need for spectrum to support wireless broadband and other important issues. By State policy, Maryland supports programs that extend broadband access into rural and under-served communities and the use of this spectrum could be a part of that important initiative. However, before there is any action to reallocate or share the spectrum, Maryland believes that any changes in public safety use of the spectrum should be delayed. Through some of the changes proposed in the NPRM, e.g., use of ULS to depict transmission

paths, etc., the real public safety usage of the 4.9 GHz band should become clearer. Additionally, with the advancement of FirstNet, new applications may be identified that ameliorate some of the need for the 4.9 GHz spectrum.

Conclusion

Maryland supports many of the modifications proposed by the Commission; particularly permitting the 4.9 GHz spectrum to be used on a primary basis for LMR backhaul. Optimally, we support the concept of a national plan for the use of this spectrum as developed in concert with APCO, the NRPC, and NPSTC. As part of a national plan, we advocate for RPC options to "carve-out" specific issues, such as channel aggregation. After a national plan is created, Maryland supports the ability of a RPC to create a unique plan for 4.9 GHz and submit it for consideration by the Commission. We support strongly the proposed modifications to ULS that more specifically coordinate use of the spectrum.

Submitted respectfully,

/s/

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